

Work Order ID 123781

August-21-14 9:15:57 AM

647.1512

B123781

123781

Page 1

Item ID: 647.1512

047.1512

Accept

N900040100

Setup Start *NS1*

Revision ID:

B123781

Stop *NS2*

Item Name: Breakaway Tip

Start Date: 8/21/14

Start Qty: 5.00

5

Cust Item ID:

Required Date: 8/21/14

Req'd Qty: 5.00

5

Customer:

Reference:

Approvals:

Process Plan: MLS

Date: 14-08-21

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr	Revision Nbr
647.1500	N/C

100

0.00

100

BAND SAW

Bandsaw

Memo

0.00

Jeaspa Bandsaw

Cut Blank at 8.600"

mk 14/08/21

5 0

110

0.00

110

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.00

HAAS CNC vertical machine #1

1-Machine per folio FB319
DWG REV: N/C
FOLIO REV: 4A

mk 14/08/22

5 0

b.a 14/08/23

DAS
08
9-89

2- deburr and break all sharp edges

Work Order ID 123781

123781

Page 2

August-21-14 9:15:57 AM

Item ID: 647.1512 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Breakaway Tip
Start Date: 8/21/14 Start Qty: 5.00 ***5*** Cust Item ID:
Required Date: 8/21/14 Req'd Qty: 5.00 ***5*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC2- Inspect parts off machine FAI/FAIB	0.00							
120									
QC	Memo	0.00							
Quality Control									
130	QC8- Inspect parts - second check	0.00							
130									
QC	Memo	0.00							
Quality Control									
140	Outsource process-Anodize per QSI017 4.1.10.1	0.00							
140									
Outsource4	Memo	0.00							
Outsource process - Anodize	Issue P/O to ATG : <u>25511</u>								
	1- Black Anodize as per Dwg 647.1500								
	2- PRIME AS PER DWG, SEE NOTE #2								
	Certification of Comformity is required								

ml 14/08/22

5

0

DAS
37
9-89 14.08.24

5

0

CL 14/08/25 5

Work Order ID 123781

123781

Page 3

August-21-14 9:15:57 AM

Item ID: 647.1512 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Breakaway Tip
Start Date: 8/21/14 Start Qty: 5.00 ***5*** Cust Item ID:
Required Date: 8/21/14 Req'd Qty: 5.00 ***5*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.00							
Packaging									
155	QC5- Inspect part completeness to step on W/O	0.00							
155									
QC	Memo	0.00							
Quality Control									
180	Identify as per dwg & Stock Location: MF3	0.00							
180									
Packaging	Memo	0.00							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								

Handwritten notes and stamps:
- 7/7/8/2 (S)
- 5
- DAS 38 9-89 14-9-2
- 5
- DGL 14-9-3

Work Order ID 123781***123781***

Page 4

August-21-14 9:15:57 AM

Item ID: 647.1512 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Breakaway Tip
Start Date: 8/21/14 Start Qty: 5.00 ***5*** Cust Item ID:
Required Date: 8/21/14 Req'd Qty: 5.00 ***5*** Customer:
Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

0.00

Quality Control

MLJ 14-09-03
MLJ 14-09-03

RD5426

Picklist Print

August-21-14 9:16:00 AM

Page 1

Work Order ID: 123781

123781

Parent Item: 647.1512

647 1512

Parent Item Name: Breakaway Tip

Start Date: 8/21/14

Required Date: 8/21/14

Start Qty: 5.00

Required Qty: 5.00

Comments: IPP REV: A NEW ISSUE JFS 14/08/20 VERIFIED BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6B2.000X00.75 0		Purchased		No		100	f	5.2080	0.717	4			

M7075T6B2 000X00 750

7075-T6 BAR 2.000' X 0.750"

Location

Loc Qty

Loc Code

MAT049

5.208

123555

0.666

→ M127736

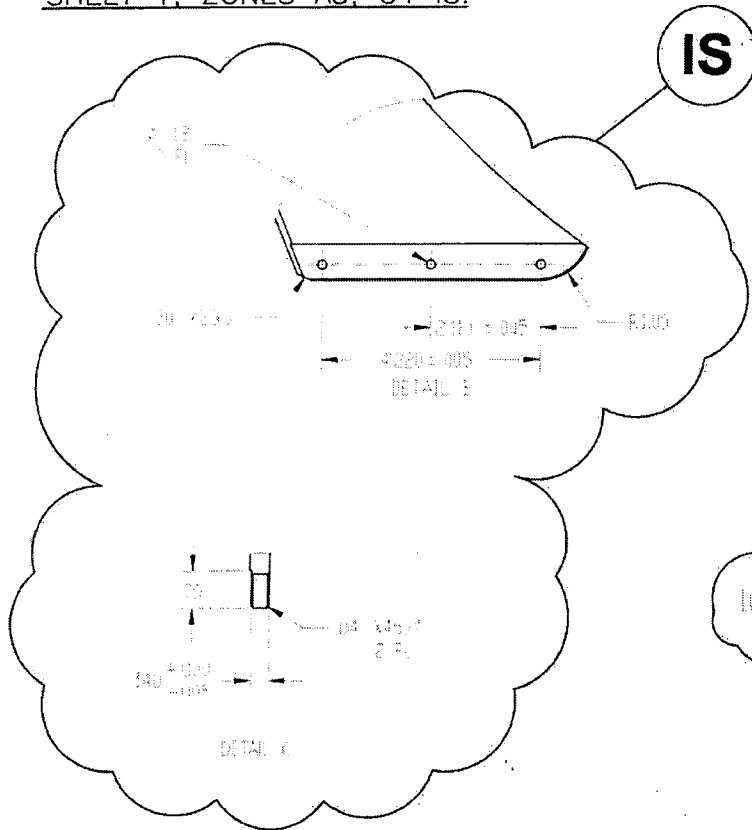
4.542

3.8 *and 14/08/21*

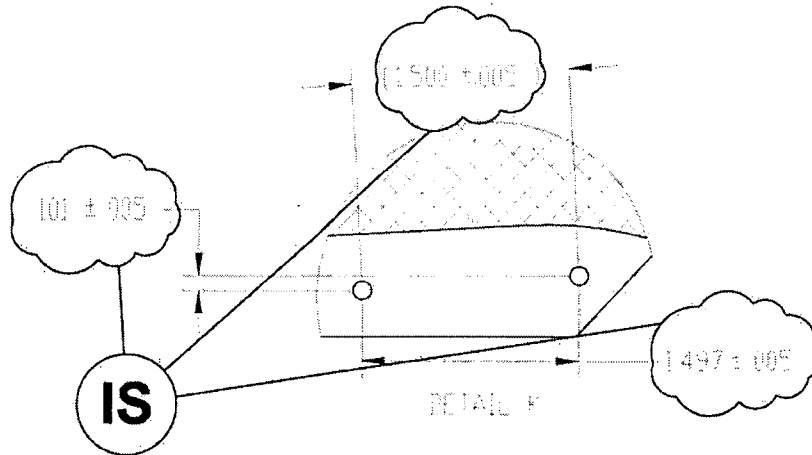
APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 02960				SHEET 1 OF 2	
	DWG NO. 647.1500	REV: N/C	PREPARED BY R. ROSANO	DATE: 09/01/10	EFFECT ON DWG <input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC.	
	DWG TITLE: DEFLECTORS					
	APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: CURRENT ORDER		
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE	REASON: ADDED DETAIL TO SHOW NOTCH, CHANGED FILLET DIM., CHANGED TOLERANCES, REPLACED CHERRY RIVET WITH SOLID RIVET					

SHEET 4, ZONES C5-C6 IS:

SHEET 1, ZONES A5, C4 IS:



SHEET 5, ZONE A3-B4 IS:

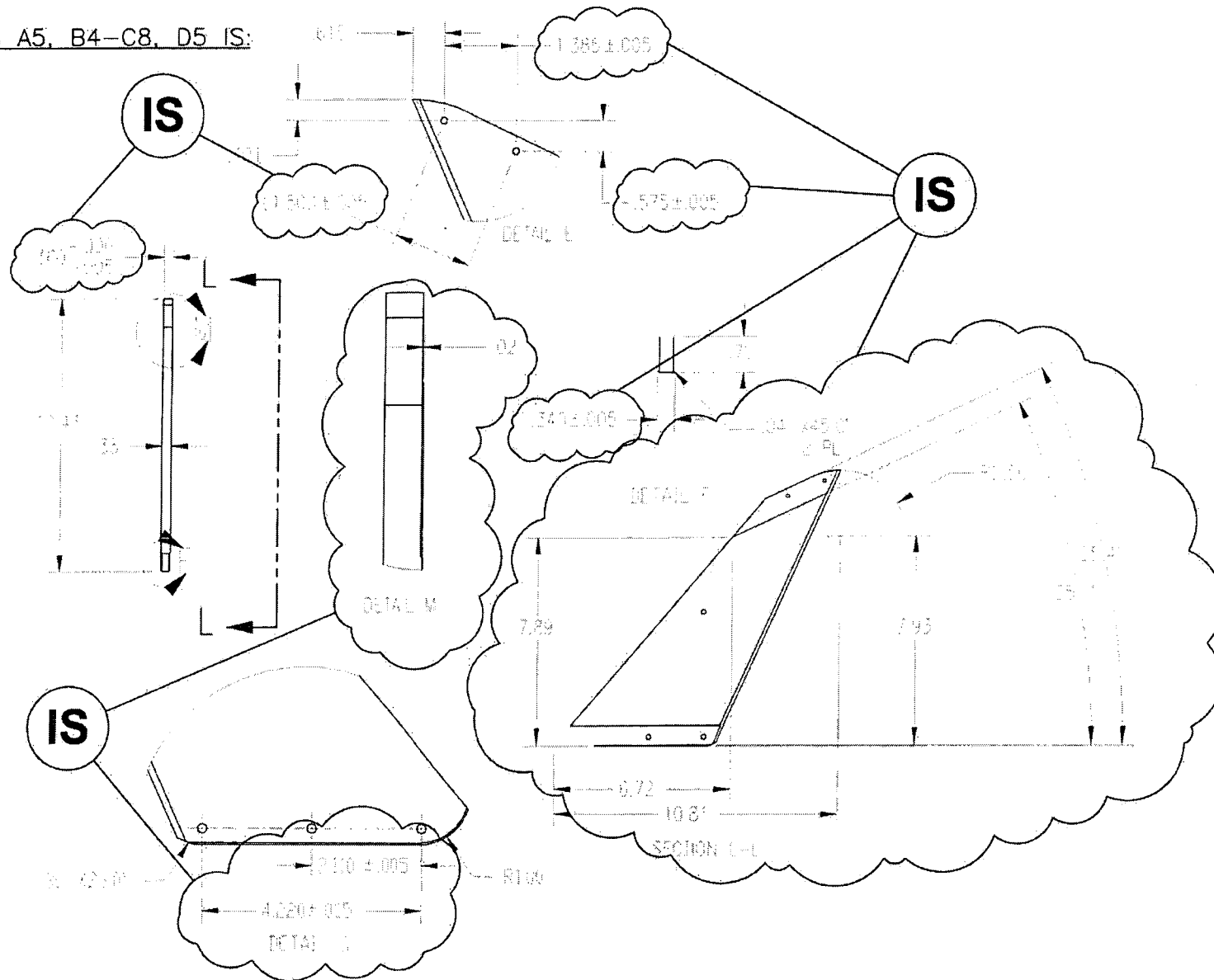


SECTION I-I

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 123781 MJS
140

4	R	600.0522	2	RIVET	MS20470AD4-10	
F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL	SPECIFICATION
DOCUMENTS EFFECTED:				<input type="checkbox"/> MDL <input type="checkbox"/> INSTALL INSTRUCC <input type="checkbox"/> ICA <input checked="" type="checkbox"/> BOM	CHANGE CATEGORY <input type="checkbox"/> MAJOR <input checked="" type="checkbox"/> MINOR	DER REVIEW REQUIRED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

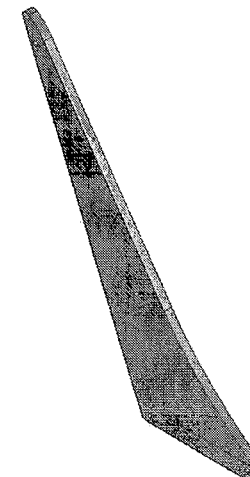
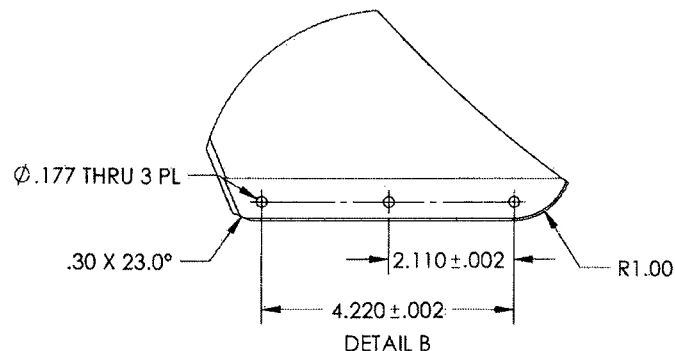
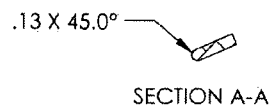
SHEET 3, ZONES A5, B4-C8, D5 IS:



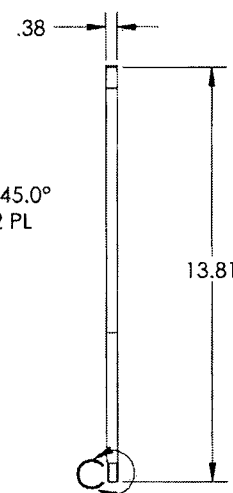
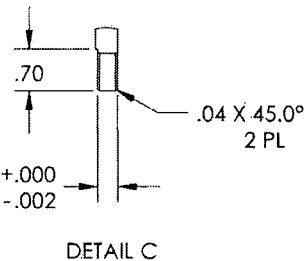
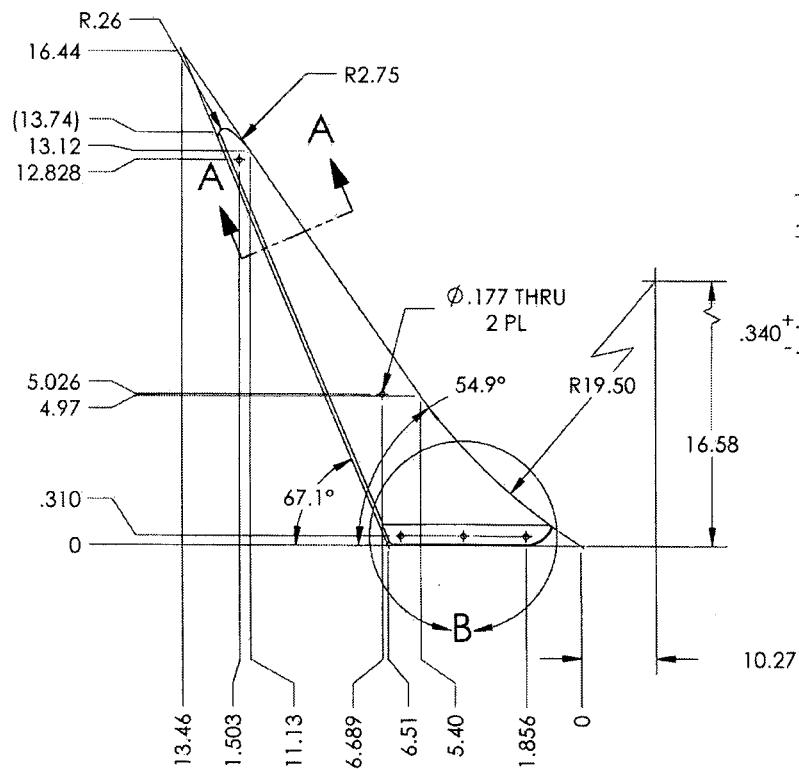
F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL	SPECIFICATION

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REV.	DESCRIPTION	DATE	APPROVED
1	LAST PROTOTYPE EVALUATION: PP1		U/C
2	INITIAL RELEASE	06/10/09	P. BRAVO



647.1510



NOTES:

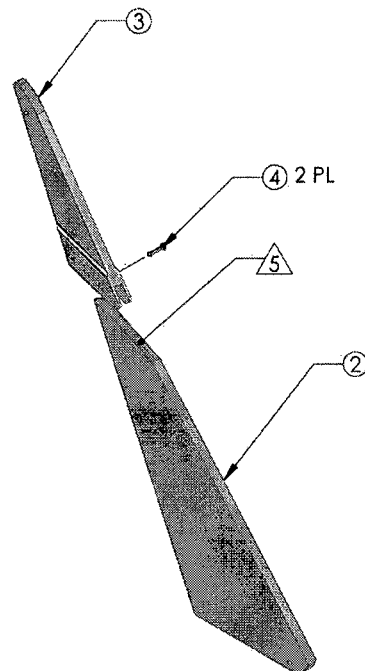
- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER PRIME IAW MIL-P-23377J TYPE I CLASS N; I-2 MIL MAX
- 3 DEBURR AND BREAK ALL SHARP EDGES
- 4 IDENTIFY IAW MPP-120
- 5 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 & 3 UPON ASSY

A/R	5	601.2045	RTV, LOCITE 598		
2	4	601.2990	RIVET	CR3213-4-10	
1	3	647.1512	BREAKAWAY TIP		
1	2	647.1511	LOWER DEFLECTOR		
1	1	647.1510	UPPER DEFLECTOR		
		647.1501	LOWER DEFLECTOR ASSY		
		1501	FIND #	PART #	
			DESCRIPTION	MATL	SPEC.
QTY			PARTS LIST		
NEXT ASSY (S)			APICAL INDUSTRIES		
647.1400			2608 TEMPLE HEIGHTS DR.		
			OCEANSIDE, CA. 92056-3512 (760)724-5300		
			DEFLECTORS		
			647.1500		
			SCALE NONE		
			SHEET 1 OF 5		

UNINCORPORATED ECN(S)

02960

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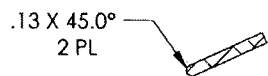
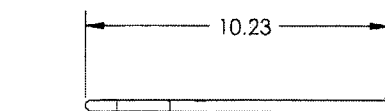
647.1501 SHOWN EXPLODED

ORIGINAL DATE 2/10/09	C9.10.09	APICAL INDUSTRIES	
DRAWN BY J. CARPENTER	CHECKED BY P. BRAYNO	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
DRAWING APPROVAL P. BRAYNO		DEFLECTORS	
COMPACT NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS: 1/16" ± .005 DECIMALS: 1/16" ± .005 ANGLES: 1° ± .1°			
REV	DATE CODE	DWG. NO.	REV
B	07M26	647.1500	N/C
SCALE: NONE		SHEET 2 OF 5	

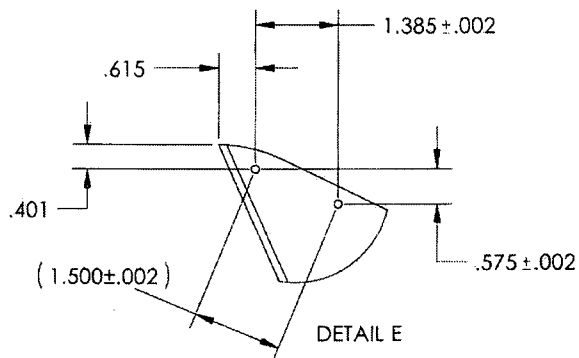
APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

DEFLECTORS

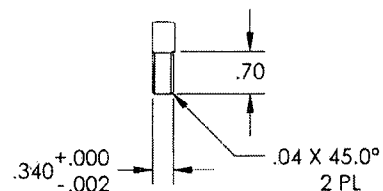
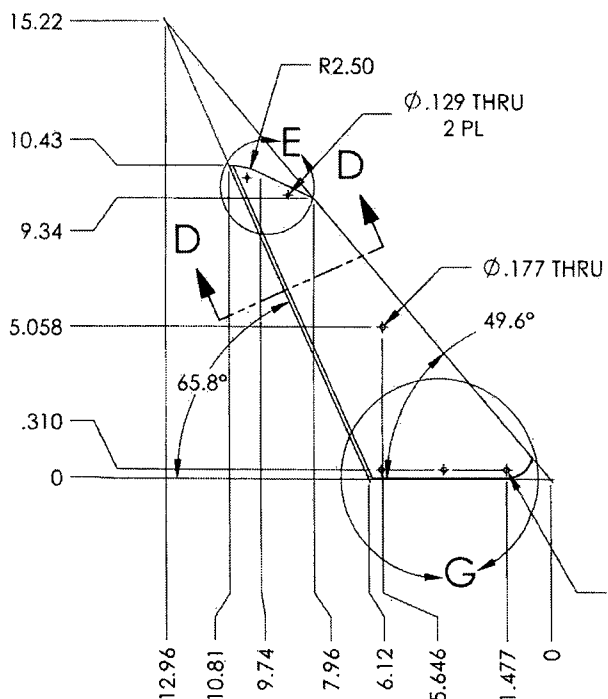
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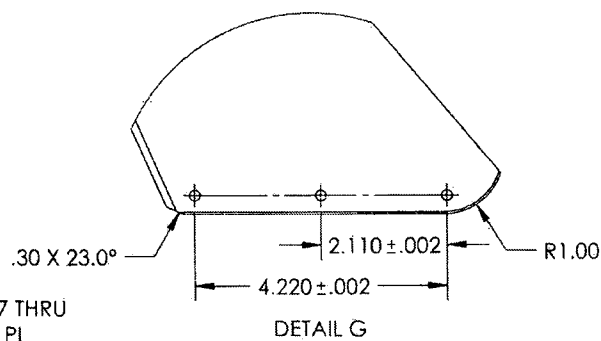
SECTION D-D



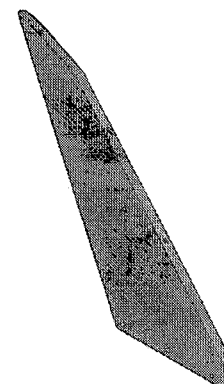
DETAIL E



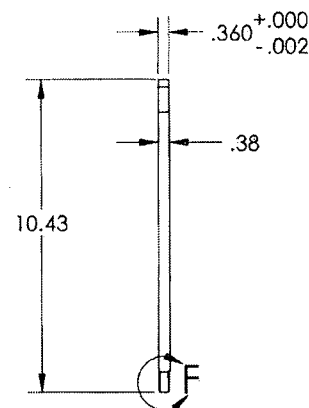
DETAIL F



DETAIL G



647.1511

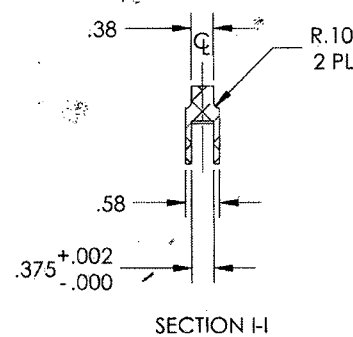
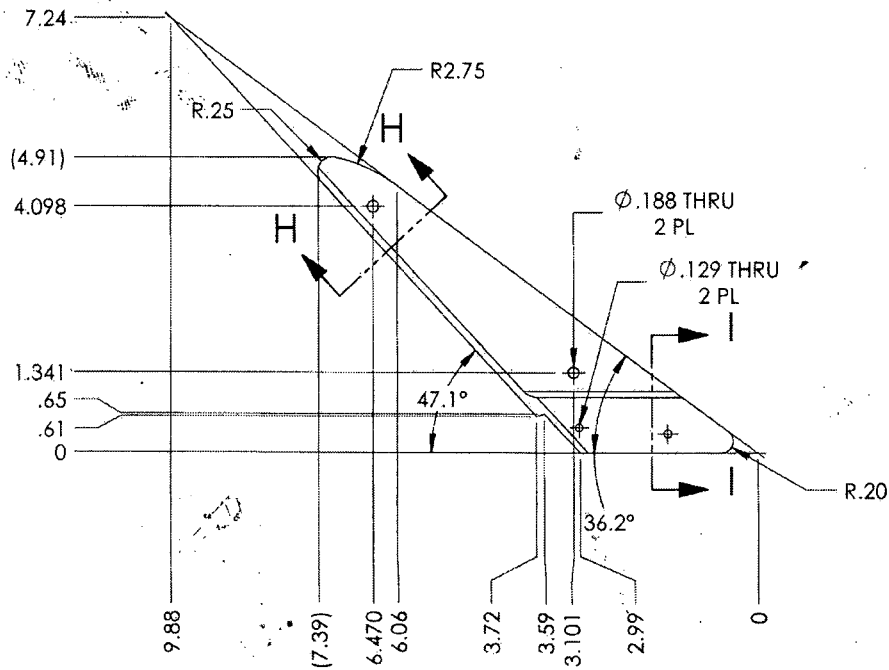


ORIGINAL DATE 09-10-99		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
DRAWN BY J. GARDNER	CHECKED P. BRAYO	DEFLECTORS	
DRAWING APPROVAL P. BRAYO		SCALE NONE	SHEET 3 OF 5
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACES DECIMALS ± .01 3 PLACES DECIMALS ± .005 ANGLES ± 5°		SET CAGE CODE B 07M26	DWG. NO. 647.1500
		REV	N/C

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.13 X 45.0°
2 PL

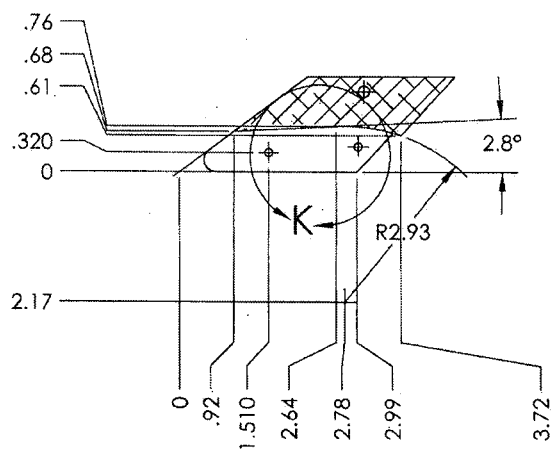
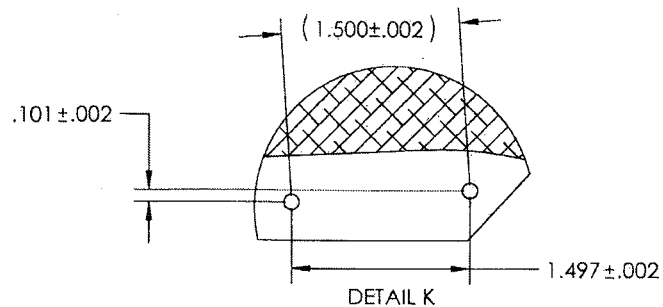
SECTION H-H



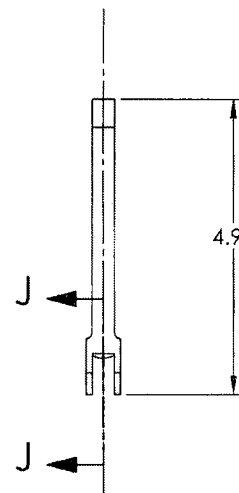
647.1512

ORIGINAL DATE 08/20/00		APICAL INDUSTRIES	
DRAWN BY J. CARDNER		2608 TEMPLE HEIGHTS DR.	
DRAWING APPROVAL F. BRAVO		OCEANSIDE, CA. 92056-3512 (760)724-5300	
CONTRACT NO.		DEFLECTORS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		DATE CODE B 07M26	REV. N/C
SCALE: NONE		DWG. NO. 647.1500	SHEET 4 OF 5

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SECTION J-J



647.1512 RIGHT VIEW

OPERATOR DATE 1/10/08 01-10-08		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWN BY J. CARDONE	CHECKED P. BRAVO	DEFLECTORS	
DRAWING APPROVAL P. BRAVO		SET CAGE CODE 8 07M26	ENG. NO. 647.1500
CONTRACT NO.		SCALE: NONE	REV N/C
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .001 ANGLES ± 5°		SHEET 5 OF 5	

DART AEROSPACE LTD	Work Order: 647.12378
Description: <u>BELECTORS</u>	Part Number: <u>647.1215</u>
Inspection Dwg: <u>647.150</u> Rev: <u>01C</u>	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
.13 X 45.0°	± .010 X ± 1/2°	.130 X 45°	—		Vern	M2-D6
1.341	± .005	1.342	—		H-G	31006
4.098	± .005	4.099	—		"	
4.91	± .010	4.915	—		"	
Ø.188	± .005	Ø.188	—		Vern	M606
Ø.129	± .005	Ø.129	—		"	
.38	± .010	.379	—		"	
R.12	± .010	R.125	—		R-6	
.58	± .010	.580	—		Vern	M1-D6
.375	± .005	.380	—		G-Pin	
.101	± .002	.102	—		Vern	M1-D6
1.500	± .002	1.500	—		"	
.320	± .005	.320	—		"	
.68	± .010	.685	—		"	
.61	± .010	.612	—		"	
.76	± .010	.765	—		"	

Measured by: <u>OM</u>	Audited by: <u>DAS 37</u>	Preliminary Approval:
Date: <u>14/08/22</u>	Date: <u>14.08.24</u>	Date:

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	=

10.04.15



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO25511**

Purchase Order Date 8/25/2014

PO Print Date 9/2/2014

Page Number 3 of 5

Order From :

VC-ATG001

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 613-446-4544

Ship To Contact

Ship To Phone

Ship Via:

VENDOR'S TRUCK

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Line Total: \$64.20

6	123781	647.1512 BREAKAWAY TIP	8/27/2014	5.00		
			Yes			
			8/28/2014			

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE 1 CLASS N

Line Total: \$53.50

7	120338	646.3719 DOUBLER	8/27/2014	30.00		
			Yes			
			9/5/2014			

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE 1 CLASS N

Line Total: \$187.50

8	120634	646.3719 DOUBLER	8/27/2014	30.00		
			Yes			
			8/28/2014			

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE 1 CLASS N

Note:

9/2/2014



A.T.G. Industries Inc.
 731, rue Industrielle Rd.
 PLATING DEPARTMENT
 Rockland, On K4K 1T2
 Canada
 Ph: (613) 446-4544
 Fax: (613) 446-4556

Pack List

Number: 63231

Date: 28-Aug-14

To

DART AEROSPACE LTD
 1270 ABERDEEN ST.
 HAWKESBURY, ON K6A 1K7
 Canada

Ship To

DART AEROSPACE LTD
 1270 ABERDEEN ST.
 HAWKESBURY, ON K6A 1K7
 Canada

Ph: 613-632-5200

Fax: 613-632-1185

Ph: 613-632-5200

Fax: 613-632-1185

Terms		Ship Via	
Quantity	Description		
14 ea	Part: 647.4114 ✓ SHIM HARD ANODIZE AS PER MIL-A-8625 TY III, CLASS 2 PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20140546 PO: PO25511	Rev:	Line:
6 ea	Part: 647.3913 ✓ BREAKAWAY HARD ANODIZE AS PER MIL-A-8625 TY II, CLASS 2 PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20140547 PO: PO25511	Rev:	Line:
5 ea	Part: 647.1512 ✓ BREAKAWAY HARD ANODIZE AS PER MIL-A-8625 TY III, CLASS 2 PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20140548 PO: PO25511	Rev:	Line:
30 ea	Part: 646.3719 ✓ DOUBLE HARD ANODIZE AS PER MIL-A-8625 TY III, CLASS 2 PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20140549 PO: PO25511	Rev:	Line:
30 ea	Part: 646.3719 ✓ DOUBLE HARD ANODIZE AS PER MIL-A-8625 TY III, CLASS 2 PRIME AS PER MIL-P-23377J TYPE I CLASS N	Rev:	